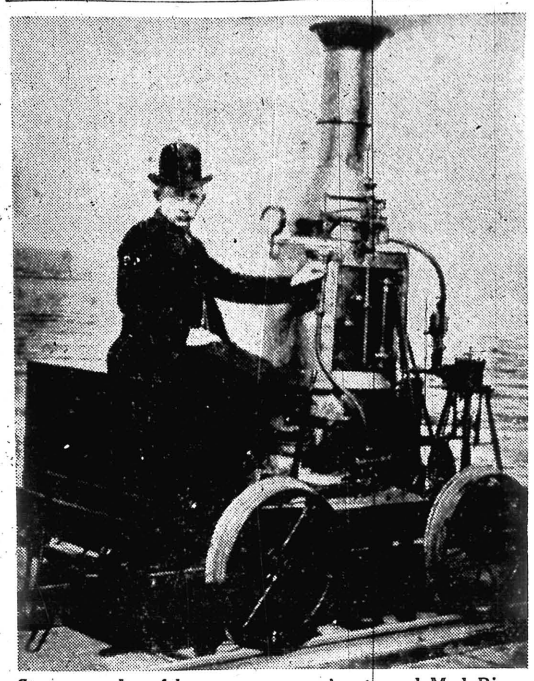
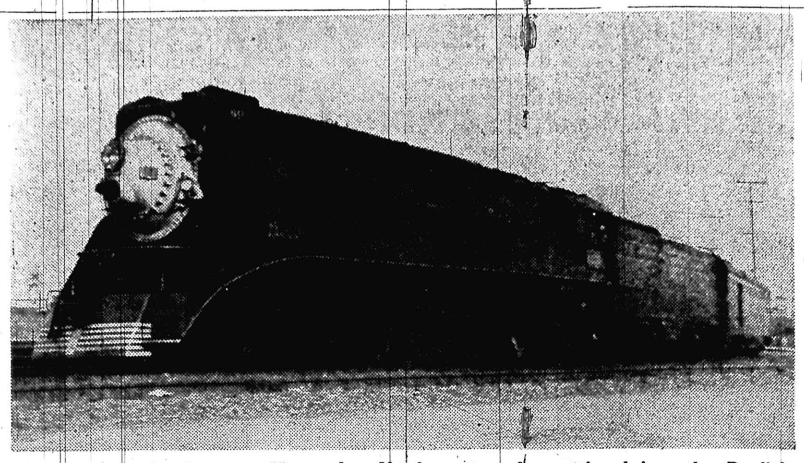
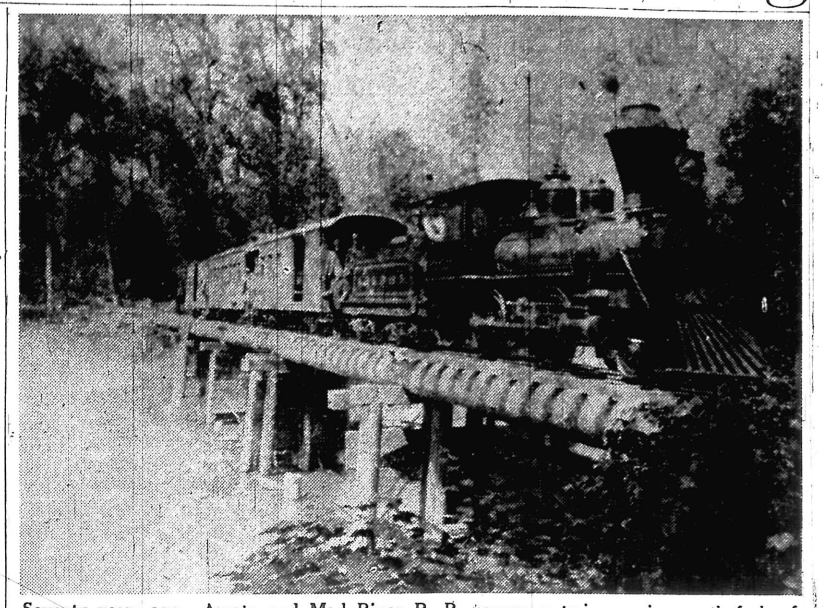
The Steam Locomotive--A Giant That Is Passing



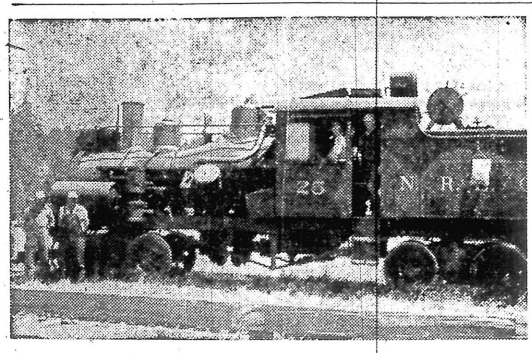
Steam speeder of long ago ran on Arcata and Mad River R. R. tracks. Photo courtesy Jack Trego.



The high pinnacle of steam. Heavy duty Northern type locomotive brings the Daylight Limited into San Francisco. Diesel-electrics recently replaced it. Photo courtesy Jack Trego.



Seventy years ago—Arcata and Mad River R. R. passenger train crossing north fork of Mad river below Korbel. Wouldn't the visiting railroad fans have liked to ride on that one! From collection of Stanley Borden.



Arcata and Mad River R. R. today—tiny Heisler geared locomotive pulls big loads.

HUMBOLDT RAILROADS, PAST AND PRESENT, HAVE VARIED ENGINES

By CHET SCHWARZKOPF

Steam locomotives are, perhaps, one of the most purely useful machines ever invented by man . . . and one of the most masculine, despite the fact they are referred to as "she."

Today, the internal combustion engine is king on the highways, airways, and—more recently—the rails. Only on the sea, and in large power plants, has steam remained supreme. But even in this air age, it takes a blase small boy who will not be interested in a big steam locomotive . . . while a legion of railroad fans follow the game with keen interest. Witness the visit of the Railroad and Locomotive Historical Society in Humboldt this week end!

For 135 years, steam was supreme on the rails. Locomotives developed from tiny toy kettles in the beginning of the 19th century, to the complex giants that are still running—and will continue to run for some time.

But they are not making many steam locomotives now days. The sunset of steam on the rails has come with startling abruptness, and the diesel-electric is ascending the throne. How long it will stay there is a moot question, heatedly debated by many steam die-hards. For steam has its advantages, still.

LOCOMOTIVES IN HUMBOLDT

Humboldt county remains a stronghold for steam locomotives —and especially older ones—which accounts for the Railroad and Locomotive Historical Society's interest in us, just now.

And Humboldt has had some historical locomotives and trains in its days, as you can see from the photographs on this page. In fact, long before Humboldt county was connected to the rest of the world by rail, it had quite a railroad system of its own. And all the engines and cars were brought into Eureka by ship, together with the rails to run them on. An heroic undertaking, to say the least.

There was John Vance's Eel River and Eureka Railroad, that ran as far as Alton and Carlotta, where it connected with the Pacific Lumber Company's line, and maintained a passenger service through to Eureka. And again —John Vance's Humboldt and Mad River Railroad that went to the logging operations at Essex, via Arcata.

There was the Arcata and Mad River Railroad—still in operation —that ran to Korbel. This line had a passenger depot in Arcata, that still stands, and ran out on the long wharf to connect with ships. And there were any number of logging railroads to points like Shively, Holmes, Freshwater, Jacoby creek and Bayside, Fieldbrook, Crannell—and at one time, passenger trains ran as far north as Trinidad.

Finally, some forty years after the first locomotive whistle sounded in Humboldt, they drove the golden spike in the Valley of the Giants in 1914, and Humboldt was welded to the outside world by a steel highway. Thenceforth, Humboldters could go "down to the city" by Pullman. Passenger traffic on ships fell away at once. The railroads were in their heyday.

That was 35 years ago, but already the mutterings of an age to come were audible to sensitive ears. For the first crude little automobiles—and some of them not so crude — were chuffing about. But their sputterings were a mere treble against the basso profundo of steam. Giant trucks were almost undreamed of then. And the diesel engine was some kind of a dingus the Germans were using on submarines. Steam was king. Long live steam!

Locomotives that were new and shining in that day have grown old in service. But they are still running, in most cases, and are still able to haul their loads. For it is axiomatic among railroad men that a steam locomotive, properly maintained, will last almost indefinitely.

Where is there an automobile on the road that was built before 1914? Oh sure, there are a few, but they are museum pieces, and no longer able to keep up. But there are plenty of steam locomotives in Humboldt of that age, or older, that are pulling tonnage just as well as the day they were built. Not alone do they handle their own weight—which is all an automobile ever does — but they must drag loads several times heavier than themselves.

Laugh if you will, at some of these "old kettles" you see—and pass—but they are plodding along with loads that run into the thousands of tons. And if you had a dollar for every ton they have pulled in a lifetime, you would be very rich indeed.

WHAT'S THE MATTER, THEN?

Why is diesel power replacing steam? Replacing it to such an extent that only one locomotive factory in America still builds steam power at all? Steam is cheaper per horsepower to build. Apparently it lasts longer, and with less intricate maintenance. It is vastly simpler—two barrel-size cylinders in steam will do the work of 24 to 43 diesel cylinders, together with generators and motors. Where is the joker—for surely the railroads know what they're doing?

There are two jokers with steam, and one of them is seemingly unbeatable. That one is fuel consumption—or "miles per gallon." For every hundred gallons of oil you burn under a locomotive boiler, less than eight are converted into power, or "drawbar pull." The rest, for the most part, goes up the smokestack as sheer waste.

A diesel engine will use as high as 30 percent of its fuel—or 30 gallons out of every 100. The best automobile engine won't use much over 20—the best steam locomotive less than eight. There, in brief, is your answer. Sure, diesel fuel is more expensive than locomotive fuel—but not THAT much. And—sad to relate—most steam locomotives don't get much over five percent from their fuel, except the very modern ones, which we do not have here.

The other, and lesser joker with steam locomotives is their roughness on the road. Their heavy driverods, flailing up and down with every turn of the drivewheels, raise hob with rails and ties. And their center of gravity, due to their high-set boilers, makes them less safe on curves at high speeds. They pitch and roll, whereas a diesel-electric literally "rides like a Pullman." Even the best in modern steam locomotives, like the Daylight Limited's engine, rides none too smoothly. And you can imagine what a strain a giant like that, weighing over 400 tons, can put on the rails at high speeds. Nor have designers been able to solve the problem.

WHY THE FUEL WASTE?

Even if designers could make a steam locomotive ride smoothly enough to compete with diesels, the fuel joker remains. But what makes 'em so wasteful?

To go fully into that subject would probably bore you — but here's part of the answer in a few words . . .

It takes five times more fuel to make water boil than it does to raise it from freezing (32 degrees) to 212 degrees, or "boiling temperature." That is what makes a teakettle "sing" for some time before it actually boils. The water has come up to 212, all right—but then it takes FIVE TIMES as much additional heat to start converting it into steam. Think THAT over.

In other words, all that extra fuel has gone to waste before the water starts changing into steam . . . five times as much. And you don't get any of it back in the form of power from the steam. It's all lost—every bit of it. That is why a locomotive is so wasteful.

If it were possible to boil water directly into steam without burning all that extra fuel first, then steam power would be the most econimical of all—instead of the most wasteful. And that is what is the matter, to put it briefly.

That particular headache is known as the "latent heat factor" in water. If engineers could solve it, steam power would come back on the railroads in a hurry. But that factor is an immutable part of natural law, and no one has beaten it. And no one is apt to beat it . . . except in one way.

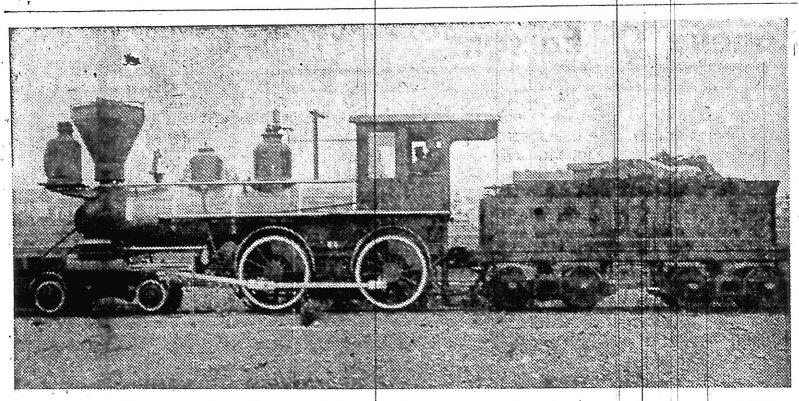
At a pressure of 3200 pounds per square inch, the latent heat factor in water disappears — but that is far too high for any boiler on a locomotive to use. Few locomotives use over 300 pounds steam pressure, and most of them stay around 200. At those pressures, the fuel waste is very great, as you can see. And that's the trouble.

SWAN SONG OF STEAM

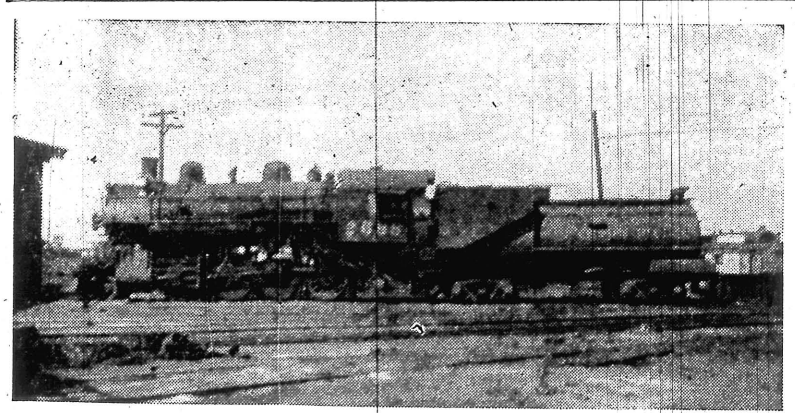
And so the giant, that held absolute sway on the rails for over a century, is at final last sinking to his knees. A smoother and more economical power that needs water only for a cooling medium, seems to have won the battle.

But nothing ever will replace the romance and thrill of steam, with its powerful baritone whistle and mighty "bark" as it tackles the grades with a load. In many ways, the steam locomotive was—and is—man's noblest machine. It has never dropped bombs, nor killed people in reckless highway crackups. It has carried the brunt of civilization's heavy hauling—and pulled some of our finest trains.

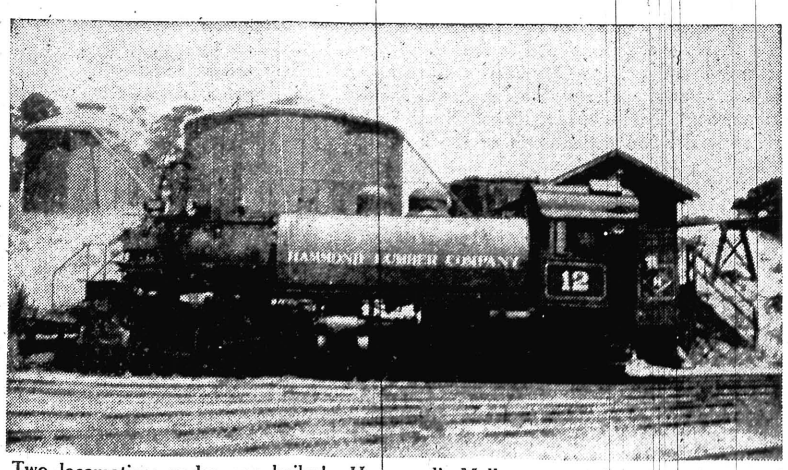
Today, its voice sings its swan song—as the "fish horn" of the newer power blares in triumph. So mote it be . . . progress cannot be denied. But every time they dismantle another steam locomotive, some one should take time off to say "Well done, good and faithful servant."



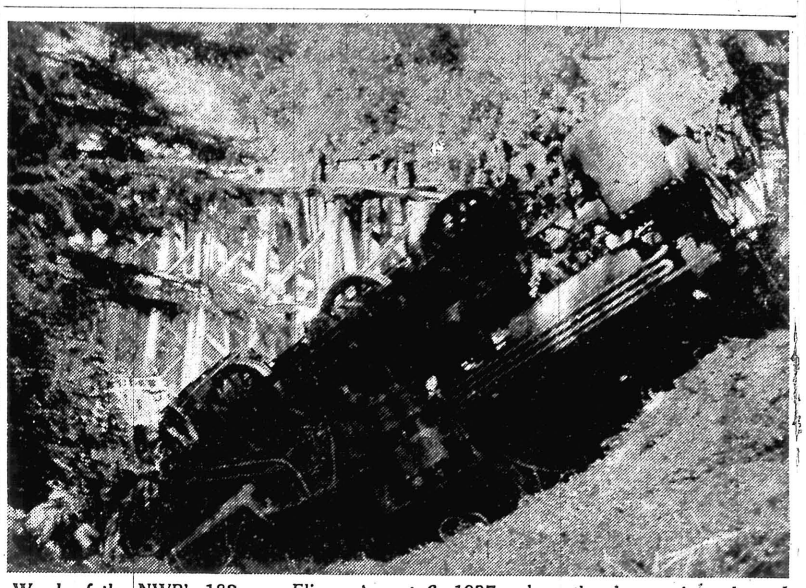
Locomotive No. 1 of Eel River and Eureka R. R. hauled trains to Alton in the 1880's From collection of Stanley Borden.



This gallant old war horse was built in 1903! It runs as good as ever in NWP freight service out of Eureka today.



Two locomotives under one boiler! Hammond's Mallet compound is the only one of its type in Humboldt.



Wreck of the NWP's 182 near Elinor, August 6, 1937, when the locomotive plunged through a burning trestle, killing Engineer Ed Weatherby, Fireman C. G. Bartlett, and head brakeman George C. Still. The 182 was promptly repaired, and is the engine that brought the railfan's special into Eureka. Photo courtesy Jack Trego.

Logging locomotive and train on John Vance's Humboldt and Mad river R. R. near Essex, about 1885. From collection of Stanley Borden.

Mothers Guild Honors St. Bernard Boys

The Mothers Guild served a dinner recently in Knights of Columbus hall when they honored boys of St. Bernard parish who have been active in athletics during the past school year. Also guests at the dinner were their fathers and Allan Bartlett, the coach, who was presented a gift by the boys.

The affair particularly honored the sixth grade baseball team which has won the city championship trophy for two successive years, and the eighth grade boys who won the baseball championship this year.

Gifts were presented to all the boys who helped win the championships. The Rev. John Farrell was master of ceremonies. Other guests included Ugo Giuntini, James Carvell, Francis (Pat) Waters, and John and Gerald Jackson, who had helped put the new school athletic field in shape for use.

The matrons arranged red and white flowers, marking the school colors, on the tables and decorated a cake for the boys. On the committee from the guild were Mesdames William H. Rogers, chairman, John Peters, Alfred Hadley, Jack McManus, Mario Toso, William Lon and Frank Kutil.

Boys present included, in the eighth grade baseball team: William Swiegart, Edward Gomes, Billy Williams, Michael Fielding, Charles Walker, John Wall, Melvin Berry, Bill Long, Paul Gierek, captain;

Sixth grade baseball boys: Herman Pozum, John Budowski, James Hadley, Mario Toso, Michael McManus, Richard Gottardi, James Mandoli, James Long, Robert Mendes, Donald Hadley, Billy Rogers;

Sixth grade basketball boys: James Hadley, James Mandoli, Donald Hadley, Mario Toso, Michael McManus, Herman Pozun, James Long, Gary Berry, Michael Waters, John Burger, James Carlin, Billy Rogers;

Seventh grade baseball boys Albert Peters, Allen McNew, Ronald Campbell, Dan Rafaelli, Thomas Cuanto, Roy Straessle and Michael Somma.